



Summer 2024

Department of Chemistry

# Newsletter

## FACULTY FOCUS: JETZE TEPE, PH. D

In January 2024, Jetze J. Tepe, Ph.D joined the Chemistry department as a professor and Director of Drug Discovery for the UVa Cancer Center. Previously,



he was an assistant, associate, and full professor at Michigan State University from 2000 to 2023.

Professor Tepe has over 20 years of experience in academic drug discovery. In 1992, he received his Bachelor's in chemistry from Jacksonville University in Florida. He continued his education at the University of Virginia, receiving his Ph.D in 1997 under the guidance of Timothy L. Macdonald.

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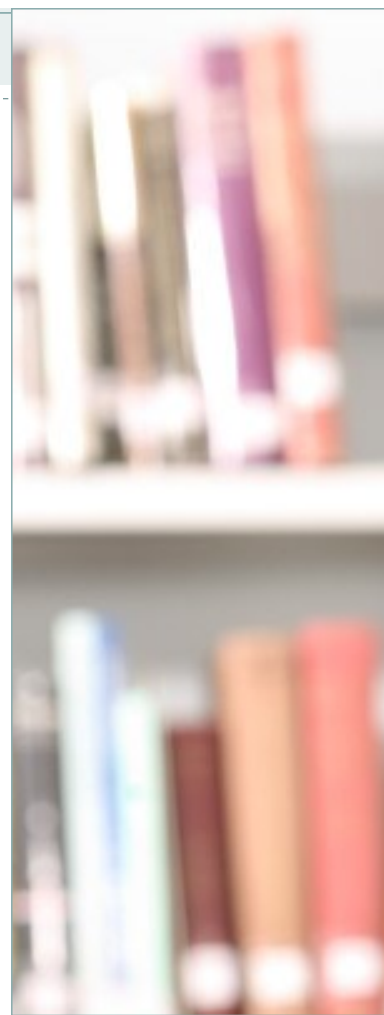
## ROTUNDA HEARTH DEDICATION

The chemical hearth found in the lower east room of the Rotunda, one of the oldest remaining examples of a hands-on lab in the United States, was named a Natural Historic Chemical Landmark in a ceremony held on March 1, 2024.

Speakers at the ceremony included President of the American Chemical Society Mary K. Carroll, senior historic preservation planner Brian Hogg in UVa's Office of the Architect, and chair of the UVa Chemistry department Jill Venton.

The hearth was discovered by conservationists doing restoration work on the rotunda in 2013. John Patten Emmet - the first Natural History professor at UVa, and the designer of the laboratory - is said to have modeled the area after the chemical labs in the College of Physicians and Surgeons in New York City run by his mentor, William J. MacNeven.

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### NEWSLETTER STAFF

- **Jill Venton**, Department Chair and Publisher
- **Seth Matula**, Department Business Administrator, Editor and Contributor
- **Amy Cabell**, Editor and Contributor
- **Delaney Hammond**, Contributor



## FACULTY FOCUS: JETZE TEPE, PH. D *CONTINUED*

He continued his education at Colorado State University, working with Robert M. Williams from 1998-2000, as a post-doctorate fellow. Professor Tepe has won many awards for his research, including awards from the American Cancer Society (2003), the International Myeloma Foundation (2013 and 2019), and the AbbVie Innovation Midwest Award (2021). He is also the founder of two biotechnology companies.

Professor Tepe will be teaching both undergraduate and graduate courses in chemistry. He will also continue his research here at the University. Currently, Professor Tepe and his lab focus their research on an interdisciplinary blend of synthetic organic chemistry, medicinal chemistry, and pharmacology. His research is funded by grants from the National Institute of Health.

Welcome to the Chemistry Department, Professor Jetze Tepe!

### DEPARTMENT FACULTY

#### LEADERSHIP

**B. Jill Venton**

Department Chair

**Charlie Grisham**

Associate Chair

**Marcos Pires**

Director of Graduate Studies

**Laura Serbulea**

Director of Undergraduate Programs

## CHAIR'S LETTER BY JILL VENTON

Dear Alumni and friends,

Chemistry continues to thrive here at the University of Virginia. In September, we had an external review, which typically happens every 10 years, and we are using that to help us chart our future course. One area it highlighted is growing the faculty and we welcomed two new professors this year, Michelle Personick and Jetze Tepe, and said goodbye to Cassandra Fraser upon her retirement. We are also expecting 3 new Assistant Professors to join us in the upcoming academic year. We dedicated the Rotunda as a national chemical heritage site in March and hosted the President of the ACS for a special dedication ceremony. Of course, the focus is always on our students, and we continue to teach over 10,000 student enrollments per year! Our faculty are leading a HHMI sponsored project to promote achievement for all students and have developed a series of small projects for implementation next year. Our graduate program continues to see large number of PhD and Masters graduates and research is being highlighted in top journals. Another focus of our external review was on staff, and we added an additional position supporting our teaching labs and an administrative assistant for departmental affairs, as well as filling some positions opened up by retirements and transfers of staff. Thus, its been a busy, but productive year, for the Department of Chemistry. As always, we value your support and would be happy to hear from you and receive donations to continue our program. Please keep in touch!



Thank you.

## ROTUNDA HEARTH DEDICATION *CONTINUED*

The hearth had several workstations with two separate furnaces. One would burn wood, while the other would burn charcoal. Flutes and vents were used to pull out smoke and fumes, while fresh air was drawn in. The hearth was made to withstand elevated temperatures for experiments, and measures approximately 6 feet wide and 5 feet deep. Crucibles, sheets of glass, home-made charcoal, and glass tubes were found around the hearth, inferring that Emmet and his students were making pipettes and other lab equipment for their experiments.

In 1842, after the passing of Emmet, the hearth was bricked over and the laboratory moved to a location across campus. It is believed that since the hearth was covered by the brick wall, it was able to survive the great fire of 1895.

In the early 19th century, hands-on lab work was not common for university students. Most labs were in private homes, and the cost of lab equipment was prohibitively expensive. When Emmet came to UVa, he advocated for a lab where he could work on experiments with his students, and not just speak to them in a lecture hall. In a letter addressed to Jefferson, Emmet stated

“Verbal instruction alone is altogether inadequate”. Although initially Jefferson disagreed, eventually Emmet was given the space in the lower east room of the rotunda to build both his laboratory and lecture room. Construction of the lecture hall and laboratory began in the early 1820s by enslaved Black people. After the hearth at the University was built, many other universities began to follow suit and built laboratories for their students to do experiments in as well, setting the standard for firsthand learning in chemistry.

The ceremony held in the former lab celebrated the influence that the University had on the study of chemistry, and the historical importance of the chemical hearth. Venton remarked “The chemical hearth in the Rotunda reminds us of the deep heritage of teaching hands-on chemistry at University of Virginia.” During the ceremony, the University was gifted a plaque from the ACS, which will explain the history and discovery of the chemical hearth to the more than 200,000 people who visit the Rotunda each year.

*“The chemical hearth in the Rotunda reminds us of the deep heritage of teaching hands-on chemistry at University of Virginia.”*



*Chemical Hearth at the Rotunda*

### 2024 UNDERGRADUATE STUDENT AWARDS

**Allison Burton**—Oscar R. Rodig Alpha Chi Sigma Chemistry Award

**Dade Walker**—ACS Student Chapter Award

**Melissa Brandt**—Hugh Miller Spencer Scholarship Award

**Olivia Maddux**—Hugh Miller Spencer Scholarship Award

**Casey Zhang**—Hugh Miller Spencer Scholarship Award

**Tabitha McClung**—Carl O. Trindle Award for Excellence in Chemistry

**Andrew Spira**—Frederick S. Richardson Award for Excellence in Chemistry

**Jake Cherkis**—Chemistry Departmental Award for Excellence

**Serena Mardini**—Chemistry Departmental Award for Excellence for a Transfer Student

**Jack Engel**—Chemistry Departmental Award for Excellence

**Serena Mardini**—Francis Carey Undergraduate Teaching Award

**Mohan Shankar**—Robert G. Bryant Undergraduate Teaching Award

**Andrew Alexis**—Robert Bryant Undergraduate Teaching Award

**Rachel Lombardo**—Robert Burnett Undergraduate Teaching Award

**An Lo**—Richard J. Sundberg Undergraduate Teaching Award

**Kwanwoo Park**—Chemistry Departmental Undergraduate Teaching Award

**Thomas Pridmore**—Chemistry Departmental Undergraduate Teaching Award

**Isabella Lee**—Chemistry Departmental Undergraduate Teaching Award

## IN MEMORIAM: FRED RICHARDSON

On the morning of April 25, 2024, longtime UVa chemistry professor Fred Richardson passed away peacefully after spending a laughter-filled weekend singing, telling stories and just remembering and celebrating family life together.

Fred's post high school years began at Dickinson College, followed by Princeton University, a two-year period in the Army and the University of California. In 1969 he and his family arrived in Charlottesville where he spent the next 38 years teaching in the Department of Chemistry at UVa.

Retirement at the foot of Flat Top Mountain in Dyke - "The Farm" - brought much pleasure to his life with the family and it gave him an opportunity to relive some of those earlier years growing up on a dairy farm in Pennsylvania.

He will be greatly missed by his wife, Joan, their four children, Julie, Elizabeth, Christine and Jonathan and their spouses, 10 grandchildren and spouses, and three great grandchildren. His spirit and life will continue to live on through the love of family, the many students he mentored along the way and the colleagues he worked beside as he carried out what his educational pursuits had prepared him for. He loved teaching!

During those retirement years, Fred served as a member of the Piedmont Virginia Community College (PVCC) board of directors, and also worked with young children in the Youth Development Council (YDC), an after-school mentoring program in the Greene County Schools. There, he was known there as "The Professor." YDC indicated that Fred made an "impact that reached far beyond the classroom walls". He loved sharing afternoons with the kids and he was forever teaching one thing or another - his choice!



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## NEW FACULTY HIRE: AMRIT VENKATESH, PH.D



Amrit Venkatesh is joining the chemistry department as an Assistant Professor starting in January 2025. He received his B.S. in Chemistry with Honors as well as his Masters at the Sri Sathya Sai Institute of Higher learning in Bangalore, India. He received his Ph.D. in Physical Chemistry at Iowa State University in Ames, Iowa. He was a Post-doctoral fellow at the Laboratory of Magnetic Resonance (EPFL) in Switzerland, working with his Advisor, Professor Lyndon Emsley. During this time he Developed dynamic nuclear polarization (DNP) polarizing agents and methods in collaboration with Dr. Olivier Ouari (Marseille), Prof. Marinella Mazzanti (EPFL), Dr. Anne Lesage (CRMN, Lyon) and Dr. Moreno Lelli (CERM, Florence). He also performed pulsed EPR spectroscopy in collaboration with Dr. Maxim Yulikov and Prof. Gunnar Jeschke (ETH Zurich). His focus at the university will be centered on the development of solid-state nuclear magnetic resonance (NMR) spectroscopy to enable the structure determination of catalysts and energy materials. To read more

about Dr. Amrit Venkatesh's focus as well as view his publications, please visit his [page](#) on the Chemistry website.

Welcome to the Chemistry Department Amrit Venkatesh!

## 2024 GRADUATE STUDENT AWARDS

**Haley Scolati**—Grote Reber Doctoral Fellowship from the National Radio Astronomy Observatory (NRAO).

**Kamil Stelmach**—NASA SCoPE Grant

**Yoojin Lee**—NIH Career Re-Entry Fellowship

**Karl Ocius**—Merck Research Award for Underrepresented Chemists of Color

**Gabe Halford**—ACS PRIDE—Merck Graduate Research Award

**Monika Wieliniec**—Representative of the year award from UJC

**Nicholas Corsello**—Newly Arrived Service Award

**Liora Wittle**—Newly Arrived Service Award

**Jacob Dell**—Newly Arrived Service Award

**Mollie Morrow**—Newly Arrived Service Award

**Rachita Dash**—Stepped Up Service Award

**Megan Moberg**—Stepped Up Service Award

**Amelia Reid**—Lifetime Service Award

**Emma Cook**—Lifetime Service Award

**Viranga Wimalasiri**—Lifetime Service Award

**Jonathan Zatorski**—DEI Leaders Award

**Sophie Cook**—DEI Leaders Award

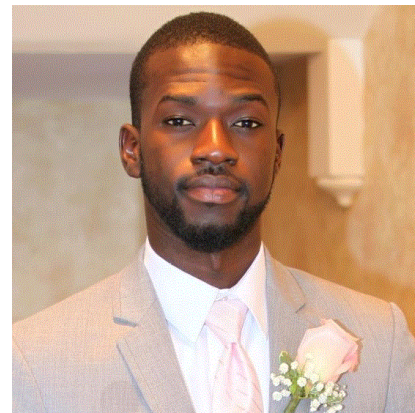
**Miranda Wood**—Teaching Assistant Award

**Jeremy Bloch**—Teaching Assistant Award

## UVA CHEMISTRY ANNOUNCES 2024 HECHT FELLOWSHIP, HUNT FELLOWSHIP, AND RITCHIE RECIPIANTS

### KARL OCIUS - 2024 SIDNEY HECHT FELLOW

Karl Ocius was chosen as the recipient of the 2024 Sidney Hecht fellowship. He is a 5th year graduate student in the Pires lab. The Hecht Fellowship was established by Professor Sidney Hecht whose mid-career spanned 28 highly prolific and influential years in the Department of Chemistry at the University of Virginia. Currently at [Arizona State University](#), Professor Hecht is a leader in biological chemistry and a great friend and benefactor of our Department. The Hecht Fellowship secures one full academic year of living support with a \$2,000 additional award as well as the standard healthcare and tuition & fees support. The Hecht Fellowship is most likely to be awarded to a Ph.D. student beginning their 4th or 5th year of study. All applications to the Hecht Fellowship are considered, however preference is given to students in organic chemistry, biological chemistry, or the broad area described as chemical biology.



### JOEY KELLY - 2024 DONALD F. HUNT FELLOW



Joey Kelly was chosen as the recipient of the 2024 Donald F. Hunt Fellowship. He is a 5th year graduate student in the Pires lab. The Hunt Fellowship was established by former students and donors to honor the accomplishments of Professor Donald F. Hunt who was a faculty member of the Department of Chemistry at the University of Virginia from 1968-2023. Professor Hunt is a leader in bioanalytical chemistry and mass spectrometry. The Hunt Fellowship secures one full academic year of living support with a \$2000 additional award as well as the standard healthcare and tuition & fees support. The Hunt Fellowship is most likely to be awarded to a Ph.D. student beginning their 4th or 5th year of study. All applications are considered but preference is given to students in the area of bioanalytical chemistry.

### AMEILIA REID - 2024 ADAM RITCHIE AWARDEE

Amelia Reid received the 2024 Adam Ritchie award. She is a 6th year graduate student in the Machan lab. The Adam Ritchie Award was established in remembrance of Adam Ritchie (UVa Ph.D., 1968) to provide some financial assistance to an outstanding graduate student. The recipient of the Ritchie award will receive a \$2,000 award. Students currently in their 3rd, 4th or 5th year are eligible to apply.



## REBECCA POMPANO NAMED SHANNON FELLOW

A new University of Virginia program has awarded 15 faculty members with fellowships to honor what Executive Vice President and Provost Ian Baucom called their “groundbreaking research” and “commitment to service” to the University. Included in this group was UVA Chemistry’s own Professor Rebecca Pompano.

The first group of Shannon Center Mid-Career Fellows represents faculty from nine of the University’s schools. The fellowship honors tenured faculty members who have made significant contributions to their departments and schools, but are not yet chair-holders of endowed professorships.

Additionally, Dr. Pompano has also been appointed to the Director’s board of the Chemical and Biological Microsystems society, received the Moore inventor fellowship, and won an NIH Compliment-ARIE challenge prize with her research team.

“With the launch of the Shannon Mid-Career Fellows program, we are taking an important step to foster excellence and build an interdisciplinary community of distinguished scholars who are rising leaders in their schools and their fields,” Baucom said. “Our first cohort is remarkable, and I am delighted that we are able to support their continued progress in their careers here at UVA.”

“They are an incredibly impressive group,” Baucom said. The new fellowship, he said, is part of the University’s commitment to “attracting outstanding faculty members to the University and making this community the place where rising stars want to build and sustain their academic careers.”



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## UNDERGRAD SPOTLIGHT: ISABELLA LEE



On May 17, 2024, Isabella Lee graduated with a bachelor’s degree in chemistry with a specialization in biochemistry and a minor in Chinese literature and languages.

She initially started as a math major, but after taking classes in the sciences, Lee discovered that chemistry is what she really loved, along with the career paths that it offers her in healthcare. Since her family is originally from China, Lee was also drawn to the study of the nation’s language and literature, so the opportunity to study them in the College’s Department of East Asian Languages, Literatures and Cultures let her take a break from her studies in the sciences, and it helped her connect a little more deeply with her family’s culture and origins.

Among the growing number of undergraduates looking for hands-on research experience, Lee has worked with UVA chemist Rebecca Pompano, helping her advance her work on the science of immunity and biomaterials that can be used to mimic living tissue. The experience has even given her the freedom to conduct research of her own, and it won both the University’s coveted Double Hoo award and her department’s Undergraduate Chemistry Award, both of which helped fund her research for several summers.

*Continued on the chemistry website, link [here](#).*

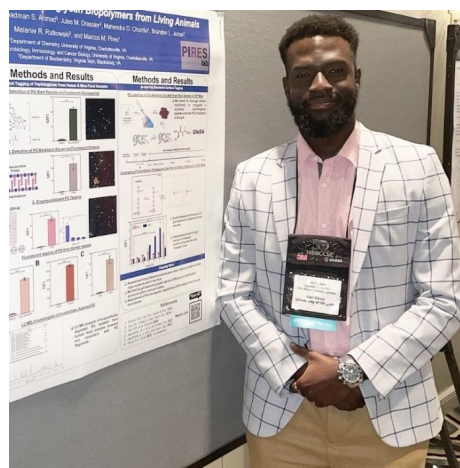
## CHEMISTRY GRADUATE STUDENT OUTREACH HIGHLIGHT: KARL OCIUS

Since joining the graduate program at UVa, Karl Ocius has volunteered with LEAD, and has served as an officer to the GSAS student council. He also holds a current DEI Committee role and recently attended the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE) conference where he was awarded the Pfizer Graduate Poster Award in the Analytical division. ChemSciComm reached out to Karl to learn more about his experiences and perspective, especially regarding his recent work with the DEI Committee. The DEI Committee exists to empower students with different perspectives by acting as a bridge between students and faculty. They work to ensure that diverse student voices are heard by the faculty, both by approaching challenges and building on positives brought to the committee. They are also able to offer support for related events and are willing to collaborate as much as needed on ideas for community projects.

*How did you come to UVA Chemistry and what are you currently working on in the Chemistry department?*

“I went to undergrad and got my masters at Liberty University just down the road. Lynchburg and Charlottesville are like cousin cities, and I had been to Charlottesville before. So, applying to grad school during the pandemic, I didn’t want to move too far. Moving can have some uncertainty, so I wanted to make an adjustment that was familiar, and UVA was an easy choice.

As for my work, infectious diseases are very common in my country [of origin]. In Haiti, people can die from trivial



bacterial infections. I found out from a friend about Marcos Pires’ research and how he is studying bacteria, both commensal and pathogenic. I was specifically interested in the way the good bacteria impact life. This is something I am excited to be learning about and work on.”

*What inspired you to participate in the DEI committee?*

“Originally, when I got involved in the DEI committee, I was asked by the DEI liaison at the time if I can help address some of the challenges we have in our community - can I help meet the needs and grow on positives in the department.

*Continued on the chemistry website, link [here](#).*

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## UVA STUDENT CHAPTER WINS ACS AWARD

For the second year in a row, the University of Virginia Chemistry Department’s ACS Student Chapter received recognition from the American Chemical Society. The Chapter received an Honorable Mention from the ACS for the 2022-2023 school year.

According to the ACS website, the responsibilities of student chapters include “setting goals, budgeting, chapter development, service and outreach, and professional development.” Chapters who received an award are recognized at the ACS Spring Meeting.

The acknowledgements were earned thanks to the leadership of former president Nina Jannatifar — now a student in the School of Medicine — and the most recent year’s board officers, led by Dade Walker.

Congratulations to the UVA ACS Student Chapter on their phenomenal work.

## PROFESSORS LINDA COLUMBUS, B. JILL VENTON, AND DEAN HARMAN ASSUME NEW PROFESSORSHIP ROLES

Last year, three members of the Chemistry department's faculty — Professors Linda Columbus, B. Jill Venton, and Dean Harman — have been granted endowed professorships.

**Linda Columbus** was recently named a Commonwealth Professor of Chemistry.



*Professor Linda Columbus*

Professor Columbus first earned her Bachelor of science from Smith College in 1996, and then earned her Ph.D. from the University of California, Los Angeles in 2001. Later, she served as an NIH Postdoctoral Fellow at the Scripps Research Institute from 2002 to 2007.

She first came to the University as an assistant professor in 2007, then was promoted to a full professor in 2019. Dr. Columbus's research focuses on biochemistry, and her interests include membrane proteins and their structure, function, and dynamics.

Professor Columbus also currently serves as the faculty director for the HHMI Driving Change Initiative in the College and as a professor of molecular physiology and biological physics.

**B. Jill Venton** was named the Thomas Jefferson Professor of Chemistry.

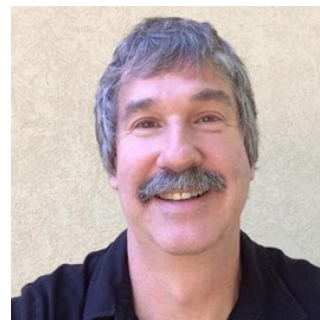
Professor Venton — who first came to the University as an assistant professor of Chemistry in 2005 — was promoted to an associate professor in 2011, and then made a full professor in 2016. She currently serves as the Chair of the Chemistry Department.

Prior to that, Professor Venton earned her Ph.D. from the University of North Carolina, Chapel Hill and served as an NIH postdoctoral fellow at the University of Michigan from 2003 to 2005. She has made significant research contributions to the field, specifically in the areas of electrochemistry, separations, and neurochemistry.

**W. Dean Harman** was also recently promoted to the role of chaired professor. Effective January 10, 2023, Professor Harman is the William R. Kenan, Jr. Professor of Chemistry.

Professor Harman studied at Stanford University earning a bachelor's degree in 1983 and a Ph.D. in Chemistry in 1987. He joined the faculty at UVA Chemistry in 1989 and served as department chair from 2011 to 2019. His research specializes in organic, inorganic, and organometallic chemistry. More on his research can be found on his website.

Congratulations to these three outstanding educators.



*Professor Dean Harman*

## GABE HALFORD RECEIVES ACS PRIDE-MERCK GRADUATE RESEARCH AWARD



*Gabe Halford (middle)*

Gabe Halford, of the Personick Lab, is a recipient of the ACS PRIDE-Merck Graduate Research Award, and he was recognized in a special award symposium at the spring ACS meeting in New Orleans earlier this week.

“The ACS PRIDE Merck Graduate Research Award annually recognizes up to six individuals who will present their research at an awards symposium held during the Spring ACS national meeting. Awardees receive a \$1,500 stipend to cover Spring ACS national meeting expenses along with a one-year mentorship program that pairs them with an industry employee. They present their research at an ACS PRIDE-Merck Graduate Research Award half-day symposium.”



## FOUR FACULTY MEMBERS EARN VARIOUS NIH GRANTS

Four Chemistry faculty members — Professors Cliff Stains, Dean Harman, Mike Hilinski, and Marcos Pires — have recently earned grants from the NIH.

Professor Cliff Stains has been awarded a MIRA (Maximizing Investigators' Research Award) from the National Institute of General Medical Sciences.

The award, also known as an R35 grant, will allow the Stains Group to investigate cellular signaling at the molecular level in order to develop novel approaches to targeting diseased cells. According to the group's project summary, they have developed new classes of fluorescent probes that monitor and respond to the presence of signaling species that are related to disease.



*Professor Cliff Stains*

“During the next five years, we will continue to develop and apply technologies to illuminate disease-associated pathways and processes,” the summary reads. “We will also pursue new platforms for the gated release of therapeutic compounds in living systems and approaches for monitoring and controlling signaling enzyme activity in living cells.”

The goal of the R35 grant is to enhance scientific productivity by providing funds that are highly flexible, while also offering stability. The MIRA for the Stains Lab totals \$1,953,405.

NIH also awarded Professor Harman \$2.1 M (MIRA) to support his group's research program on dearomatization.

The goal of the awarded research program is to develop new classes of chemical compounds to be screened for efficacy against various diseases. The synthetic approach described in the funded proposal, which involves a tungsten-activated benzene substrate, is fundamentally different than other known approaches to cyclohexene and cyclohexane compounds, and allows access to new materials with widely diverse shapes that are rich in amines, amides, carboxylic acids, esters, and heterocyclic fragments groups that are ubiquitous in pharmaceutical agents. Access to such compounds improves the chances for the discovery and development of new medicines to improve public health.

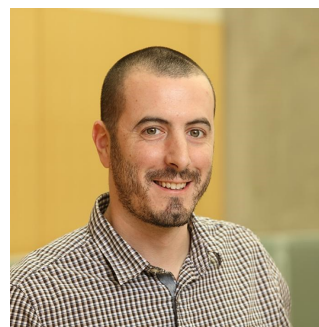
Chemistry Professor Mike Hilinski has been awarded a R35 grant from the National Institute of General Medical Services. The grant, worth \$2,059,575, will advance the Hilinski Group's research on addressing unsolved challenges in catalysis and synthesis that have immediate relevance to the contemporary practice of drug discovery, and that have the potential for broad impact as widespread platforms for new reaction discovery and/or synthetic planning.

Professor Marcos Pires recently earned two grants from the National Institutes of Health.

The first, an R01 grant from the National Institute of Allergy and Infectious Disease, was awarded for the Pires Group's research in “Bacterial and Molecular Determinants of Mycobacterial Impermeability.” The grant is worth \$3.6 million and will allow the researchers to investigate the growing threat of antibiotics resistance.

The second, an R35 (or MIRA) grant from the National Institution of General Medical Science, will fund the group's research “Unraveling Bacterial Cell Wall Biosynthesis and Sensing via Synthetic Analogs.” The grant is worth \$1.95 million.

Congratulations to Professors Stains, Harman, Hilinski, and Pires on these exciting achievements.



*Professor Mike Hilinski*

## NEW FACULTY HIRE: XIN MA PH.D.



In January 2025, Professor Xin Ma will be joining the Chemistry department as an Assistant Professor. Previously, Professor Ma worked as a Post-doctorate fellow at the School of Chemistry and Biochemistry at the Georgia Institute of Technology under Professor Facundo M. Fernández. He recently developed matrix-assisted laser desorption ionization mass spectrometry imaging (MALDI MSI) methods for ovarian cancer lipidomic and N-glycomic profiling.

Professor Ma received his B.S. in Chemistry at Lanzhou University in Lanzhou, Gansu Province, China., and he received his Ph.D in Chemistry at Purdue University in West Lafayette, Indiana.

At UVa, he will focus on developing new versatile MSI platforms and apply them into different bioanalytical applications.

To read more about Professor Ma's education, focus, and awards, please visit his [page](#) on the chemistry website.

Welcome to the Chemistry department Xin Ma!

## JHERIAN MITCHELL-JONES SELECTED AS A 2023 INSTITUTIONALLY SUPPORTED SREB SCHOLAR

Graduate student Jherian Mitchell-Jones has been selected as a 2023 Institutionally Supported Scholar by the Southern Regional Education Board.

The award will allow Mitchell-Jones to attend the Institute on Teaching and Mentoring, a four-day gathering of minority doctoral scholars. There, Mitchell-Jones will learn various strategies to navigate and succeed in her doctoral studies. She will be able to attend the annual Institute for the next three years.

The Southern Regional Education Board, or SREB, is a nonprofit organization whose goal is to improve the quality of education in each of its 16 member states. Their Doctoral Scholars Program seeks to support and encourage minority students' participation in Ph.D. programs.

Mitchell-Jones's selection as an Institutionally Supported Scholar is a testament to her hard work and academic excellence.

Congratulations, Jherian!



## UNDERGRAD SPOTLIGHT: RACHEL LOMBARDO

Rachel Lombardo ('24) recently completed undergraduate degrees in biochemistry and environmental science. Ever since high school, she said, she has had a particular interest in the interaction between chemistry, biology, and environmental science.

Despite beginning her time at the university in the midst of the pandemic, she said that chemistry faculty helped to make her first year in college enjoyable and engaging. She took the accelerated introductory sequence with Dr. Harman during her first semester, igniting her involvement with the department.

“Despite that, it was the peak of the pandemic, I attended his Zoom office hours every day after class to ask him questions about the various topics we discussed,” Lombardo said. “After that semester ended, I reached out to him about serving as a teaching assistant for his class the following year and performing research in his laboratory. Both of these opportunities tremendously shaped my academic experience.”

Lombardo also stated that Professor Serbulea and Cindy Knight made a positive impact on her time at the University.

In the Harman lab, Lombardo was able to contribute to a number of research projects.

“The first project I worked on was the methylphenidate project in which the goal was to synthesize more complex forms of Ritalin for the treatment of cocaine addiction,” Lombardo said. “This was done by binding a tungsten complex to the aromatic molecule pyridine. From there, we synthesized a Ritalin derivative and performed nucleophilic addition reactions to achieve greater complexity.”

In addition to this pursuit, Lombardo also worked on a project that involved binding cycloheptatriene to the tungsten agent and performing organic synthesis reactions to generate more complex cycloheptene molecules, which she was able to break down into three sub-projects. In the environmental science department, Lombardo also completed research on investigating the chemistry of an acidified stream in Shenandoah National Park before a liming remediation application by the National Park Service.

Now, Lombardo is pursuing a Ph.D in Toxicology in the department of environmental medicine at the University of Rochester School of Medicine and Dentistry. She hopes to become a professor and pursue her own research on water pollution and its effects on human health.



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## STOREROOM HIRES NEW MANAGER PATRICK DOWHAN

On July 1st 2024, Patrick Dowhan took over as the manager of the Storeroom. Cam Hawley, the previous manager of the storeroom, retired after leading our stockroom through many changes, and we thank him for his service. Patrick Dowhan previously worked as a First mate on Oil tankers for over 10 years, and has most recently worked as a warehouse manager at a local HVAC company for 2 years. He has experience in managing teams, dealing with hazardous materials, inventory, and implementing computer systems, and he will be a great asset to the Storeroom as we transition to this new period.

Welcome to the department, Patrick Dowhan!



## UNDERGRAD SPOTLIGHT: JACK ENGEL

Jack Engel ('24) knew that he wanted to pursue a degree in chemistry ever since taking an honors biology course in middle school. "The idea of simple molecules — amino acids, monosaccharides, nucleotides, et cetera — being the building blocks for everything inside the human body left me positive that I wanted to major in biochemistry," Engel said.

Since then, he has worked hard as a double major in biochemistry and music. Engel said that thoughtful guidance from professors and administrative staff has made his experience with the chemistry department one to remember.

"Every conversation that I had with my professors, whether personal or academic, was truly a pleasure," Engel said. "It's obvious that each professor cares deeply about the students as people as well as students — that, combined with the incredible [administration], makes anyone's experience with the department splendid."

As an undergraduate researcher in Dr. Li's Chimeric RNA lab, Engel has pursued several projects in his four years. He helped the lab unveil a complex landscape of chimeric RNA transcripts in COVID-19 patient samples. He worked on another project in which the lab wrote a bioinformatic quantitation pipeline, validated with simulated sequencing data, to evaluate the prevalence of chimeric RNAs in RNA-sequences. He also helped perform Allele-specific splicing analysis between *Mus musculus* and *Mus spretus* through the utilization of F1 dihybrid crosses.

Currently, Engel works as a Lab Technician in Dr. Craig Slingluff's Lab at the University studying the melanoma tumor micro-environment.

"My research here is focused on improving the surgical management of melanoma patients with clinically-detected LN metastases," Engel said. "While working in Dr. Slingluff's Lab, I am applying to MD-PhD programs across the country, with hopes to fulfill my lifelong dream of becoming a physician-scientist."

In his remaining time in Charlottesville, Engel will also work in the Music Resource Center, finishing up projects in the Li lab, and gaining clinical experience at the UVA Hospital.



## LEAH KEISER HIRED AS NEW GRADUATE PROGRAM COORDINATOR



On July 15, 2024, Leah Keiser began working in Chemistry as the new Graduate Programs Coordinator. Leah recently relocated to Charlottesville from Baton Rouge, LA. At LSU, she earned her Bachelor of Interdisciplinary Studies in 2017 and a Master of Public Administration in 2022. She most recently worked as an administrative assistant and LSU Site Coordinator for The Chapel Baton Rouge. Her academic work experience includes serving as a Documents and Records Coordinator for the LSU Graduate School and the Office Coordinator for the LSU History Department. Welcome Leah!

## UNDERGRAD SPOTLIGHT: CHARLES ELLISON

Charles Ellison ('24) is a recent graduate from the department of Chemistry who also double-majored in kinesiology. Coming into the University, Ellison knew that he had an interest in chemistry from taking an organic chemistry class in high school. According to Ellison, his interest in the medical field also influenced his decision to take chemistry classes.

"I was pre-med coming into college, and knew I wanted to end up in some sort of STEM field," Ellison said. "So, chemistry seemed like the perfect blend of useful and interesting education."

Ellison shared that his positive experience with the Chemistry department is largely thanks to strong connections to faculty and staff. He cited the introductory 1800-level course series as a highlight of his college experience.

"I'm glad I chose to take those courses, because Professor Harman was a great start to college, and Dr. Serbulea made organic chemistry just as interesting as I remember," Ellison said. "Cindy Knight was also always so approachable, personable, and helpful, which made the double major process much more comfortable for me."

Though he did not perform research for the Chemistry department, Ellison has done research in the Kinesiology department on exercise as an adjunct therapy for breast cancer patients undergoing chemotherapy.

"Chemo has very detrimental side effects on heart health, and pilot data suggests that concurrent aerobic exercise during chemo preserves both structural and functional adaptation in the heart and mitigates these off-target effects of chemo," Ellison said.

This year, Ellison will stay at the University to complete a masters in exercise physiology and plans on earning a PhD in the same field.

## AMY CABELL HIRED AS ADMINISTRATIVE ASSISTANT TO THE CHAIR

On June 17, 2024, Amy Cabell filled a new position within UVA Chemistry as the Assistant to the Chair. In addition to support the department chair, Amy will be responsible for event planning especially focusing on the department seminar series. Additionally, she will handle departmental communications and website maintenance. Prior to join us, Amy worked as a receptionist at a law firm and a freelance editor. Please welcome Amy Cabell!



## Keep In Touch

We love to hear updates from our alumni on your life and career. You can join our alumni group on:

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Or send us an update by email to [chem@virginia.edu](mailto:chem@virginia.edu)

Also, would you consider a donation to our mission? Donations may be targeted to any program you have read about, but the vast majority of our donations are not targeted and are used to finance our summer undergraduate research fellowships. We appreciate your support of the department!

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